

JOHN W. TAYLOR

# Virginia Wildlife

*Dedicated to the Conservation of  
Virginia's Wildlife and Related Natural Resources  
and to the Betterment of  
Outdoor Recreation in Virginia*

*Published by VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES, Richmond, Virginia 23213*



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VIRGINIA WILDLIFE is published monthly at Richmond, Virginia, by the Commission of Game and Inland Fisheries, 7 North Second Street. All magazine subscriptions, change of address notices, and inquiries should be sent to Box 1642, Richmond, Va. 23213. The editorial office gratefully receives for publication news items, articles, photographs, and sketches of good quality which deal with Virginia's soils, water, forests, and wildlife. The Commission assumes no responsibility for unsolicited manuscripts and illustrative material. Credit is given on material published. Permission to reprint text material is granted provided credit is given to the Virginia Commission of Game and Inland Fisheries and VIRGINIA WILDLIFE. Clearances must be made with photographers or artists to reproduce illustrations.

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**DECEMBER**  
**Volume XXVII/No. 12**

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**COVER:** In the bleak and melancholy winter landscape when bird life in general is at its lowest ebb the chickadee reaches the height of his prominence, enlivening many dreary days with his cheery presence and song. Always full of action, restless, and bold, this tiny avian acrobat often turns the tables on the human bird watcher whom he inspects with an amusing and impudent curiosity. Our artist: John W. Taylor, Edgewater, Maryland.

**SUBSCRIPTIONS:** One year, \$1.50; three years, \$3.50. Give check or money order, made payable to the Treasurer of Virginia, to local game commission employee or send to Commission of Game and Inland Fisheries, P. O. Box 1642, Richmond, Virginia 23213.

## Not Sour Grapes

THANKSGIVING morning around 9 o'clock I stopped my car near a bicolor patch, opened the door to let out my whiningly eager Brittany and officially opened the bird season. (By "bird" I naturally mean the bobwhite quail, the smartest and most aggravating little bird I ever loved and spent countless hours trying to kill.)

The little dog hadn't traveled 50 yards before she slowed down, tensed up, and then froze into a solid point. The covey, a nice one, held well and flew straight away. I emptied both barrels without cutting a feather.

Now there was nothing exceptional about this shooting exhibit, and it was duplicated more than once during the next three months. The remarkable thing was that an almost identical event occurred the last day of the season. The dog pointed within 10 yards of where she'd made the Thanksgiving point; the birds held well and then flew straight away in the same direction they'd flown opening day; and I missed with both barrels. The little dog, a confirmed optimist despite the fact that she's been watching me shoot for several years, started chasing around looking for downed birds. She'll never learn.

Naturally, I cussed a little and then started laughing, called in the dog and headed home; and driving back to town did a little thinking. Perhaps the birds I'd missed opening day had given me a couple more chances during the season, and some of them might even have ended up in one of my skimpy bags. And the birds I'd just missed would probably produce a covey that would give me sport next season; and their whistling during the coming months would certainly make the woods more cheery.

Honestly, this is not sour grapes. I tried my best to kill birds on both the above-described occasions, and was disappointed when I didn't. But the pleasure of a good shot—any time I kill a bird it's a good shot—would have been long forgotten, as would the taste of a few bites of delicious meat. So, come to think of it, I'm glad I missed; but this won't keep me from doing my best not to miss when I meet those birds or their descendants next season.

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*Written by Editor EDDIE FINLAY for South Carolina Wildlife, quarterly publication of South Carolina Wildlife Resources Department, and reprinted by permission.*

I have just read your November editorial entitled "Rising Expectations." In my opinion, your point is very sound and I am in full accord.

It concerned me, however, that in asking the question, "But is outdoor recreation *as an end in itself* a proper purpose upon which to base public policy?" there appears to be an implication that the public policy spearheaded by the Virginia Outdoors Plan contemplates outdoor recreation in the limited "end in itself" context.

As a matter of fact, the very point I understand you are trying to make is spelled out fully in VIRGINIA'S COMMON WEALTH—the Report of the Virginia Outdoor Recreation Study Commission. One of the major findings of the Study Commission reads as follows:

"The term 'outdoor recreation' must include the entire Virginia outdoor environment. The most popular forms of outdoor recreation are the simplest ones—driving, walking, swimming, and picnicking. So outdoor recreation must involve State Parks and the roads which take people to them; municipal parks and playgrounds and habitable communities; access to ample, unpolluted water; historical sites and harmonious countryside. All of these are outdoor recreation resources and they must be dealt with as interrelated parts of the total environment in which Virginians work, play, and live."

And the 21 specific recommendations are aimed at "outdoor recreation" in the very broadest sense. Legislation passed by the 1966 General Assembly, based on these recommendations, provides us with the policy, the tools, and the funds to undertake the Virginia Outdoors Plan—a program of comprehensive and continuing action to protect the basic resources, elevate the quality of our environment, and provide the opportunities for people to enjoy their natural heritage.

Your Commission, your magazine, and you yourself have been a great assistance to us in developing the Virginia Outdoors Plan. Mr. Phelps is a member of the Commission. I hope very much that you would consider it desirable in the future to make it clear that the Virginia Outdoors Plan is a means of undertaking just what you have espoused in this particular editorial.

*FitzGerald Bemiss  
Richmond*

*No implied criticism of the Virginia Outdoors Plan was intended. Senator Bemiss' Study Commission undertook to inventory outdoor recreation resources and facilities and to estimate future needs, and ended up, in its very excellent and comprehensive report, talking about total outdoor environment. The broad scope of the resulting Virginia Outdoors Plan is indicated by its very title. In last month's editorial we suggested further changes in our collective thinking about outdoor recreation and environmental quality. We regard the Virginia Outdoors Plan as a pioneering effort in the right direction.—Ed.*

# Not To Chase A Deer

By BOB GOOCH  
*Troy*

**B**Y Virginia deer hunting standards, I have to be classed as a maverick. Why? Because I depend upon the counties east of the Blue Ridge for my venison, but use hunting methods employed west of the mountain marker.

The Old Dominion is a unique whitetail state. Trail hounds are illegal west of the Blue Ridge, and there most deer are taken by stalking and trail watching. In the vast eastern territory, however, deer dogs and deer hunting are almost synonymous. The same is true throughout most of southeastern United States, and I have no quarrel with this fine sport—so long as it does not degenerate to road hunting where sportsmanship evaporates into the bitter atmosphere of disgruntled landowners.

I used to hunt with dogs, but I don't anymore. I have found more pleasure in other methods, and a couple of trophy racks and venison in my freezer are evidence of their effectiveness.

With dogs removed from the picture, the whitetail hunter has to rely upon his knowledge of deer and their habits, his

woodsmanship and his clothing and equipment, in his quest for venison. How successful he is will depend upon how well he masters these essentials.

The acuteness of the whitetail's three senses, sight, hearing and smell, vary considerably, and the nimrod must learn to cope with each of them.

Smell is the animal's best defense, and nothing spooks a crafty old buck quicker than human scent. For this reason the wind is an important consideration. The nimrod has to be constantly aware of the direction it is blowing. He hunts into the wind so that his odor will be carried away from his quarry. A substantial shift in the fickle currents can completely change his well laid plans.

Next in importance to the whitetail hunter is the animal's sense of hearing. The woods are full of noises, and the hunter may snap a twig occasionally and get by with it, but let him cough, talk, or plough through a thicket, and every deer within hearing range will flush toward the next county.

For this reason, soft finish clothing and crepe or rubber sole boots are necessary. Duck or similar clothing, so

This fine buck was taken from a stand without benefit of dogs or drivers less than an hour after the opening of the 1965 season.



popular with upland game hunters, is very unsatisfactory for deer hunting.

The sense of vision is the deer's weakest weapon. He is totally color blind. Inconspicuously located, a stationary human becomes a part of the terrain, and this is the key to this aspect of deer hunting. Once within the sight of his quarry, the hunter avoids sudden moves and does not move at all while the game is looking his way.

A knowledge of a game animal's habits is important in any form of hunting, and becomes particularly so when dogs are not used to find and flush out the game.

Since whitetails feed mostly at night a knowledge of their feeding grounds is essential, and should be acquired by preseason scouting trips. A prime time to outwit a buck is while he is moving to or from a feeding area.

During daylight hours deer bed down in thick swamps, laps or other heavy cover. Locating a whitetail and getting a shot under these conditions is more difficult.

The deer hunter's clothing and equipment requirements are the same whether he still hunts or takes a stand near a well used trail or feeding area. His clothing—cap, jacket and trousers—should be of soft finish. Wool is preferable, though cotton flannel may be satisfactory in warm weather. But wool is also water resistant, and the extra warmth is welcome during the winter months when the eastern deer season is still open. Footwear should keep the feet warm and dry, and permit the hunter to move quietly through the woods. Eight- to ten-inch boots with crepe or rubber soles are ideal.

The only purpose that color serves is to protect the hunter from other hunters, and bright red, orange or yellow are favorite deer hunting colors. Color is wise even in the eastern counties where deer hunters are not as numerous. Others replace them, and may be just as trigger happy. The deer hunter is a lone hunter. He moves quietly, and is not as readily identified as a party of hunters accompanied by beagles or bird dogs.

Most Virginia deer are killed in woods, thickets or edges, and the need for a long range rifle is limited. More important is a weapon that can be handled easily at close quarters, and a bullet that does not blow up on twigs or small branches that may separate the hunter from his game. The little 30/30 carbine is my choice for deer hunting. It is small and light, and easy to handle, and its limited range makes it safe for use in farm country.

I do not like shotguns for deer, and where rifles are illegal I prefer the bow and arrow.

For woods hunting a telescopic sight can be slow and cumbersome in getting on the target. Most deer hunters consider the peep sight a better choice. These sights are adjustable, permit the shooter to get on his target quickly, and for short ranges are very accurate. Regardless of the sight used, the rifle should be sighted in before the season opens.

Other helpful items of equipment are binoculars, a good knife, and a length of light rope. Their use will be explained later.

Trail watching from a well selected stand is a most effective way to bag a buck. The stand may overlook a well worn trail, a feeding area, or an escape route—a route deer use when alarmed.

The hunter must be careful that even a slight breeze does not carry his odor to the area he expects his quarry to approach. Once he selects a stand he should clear away all



A shot just to the rear of a deer's shoulder kills quickly and humanely, and destroys little usable meat. Such a carefully placed shot is often easy for the still hunter, but seldom possible when a deer is running before a pack of dogs.

loose leaves and debris so that he can shift to a shooting position without creating a disturbance.

A good tree stand adds tremendously to a hunter's chances. The whitetail's natural enemies seldom strike from skyward, and so a deer rarely glances up, being more concerned with danger from its flanks, front and rear. A tree stand also gives the nimrod better command of the area, and for short distances at least, his elevated position sends his scent over the deer's head.

I like to get on a deer stand well before daylight, and this means reconnoitering the day before. Trying to get situated in the darkness without the advantage of this familiarization may prove hopeless. My second choice time-wise is a couple of hours before sunset, as deer start their move to a feeding ground.

Once on the stand the hunter should remain alert and, using binoculars, frequently glass the countryside. He can often spot a deer long before it comes within range of his stand.

The variety of wildlife to be observed as the hunter sits quietly in this manner, is a bonus to deer hunting.

For the hunter who prefers to keep on the move, still hunting or stalking can produce venison. This means working slowly into the wind in hopes of surprising a whitetail. Again, sudden moves should be avoided, and once game is

that may miss or only cripple. The good rifleman takes his time and squeezes off his shot. The area just to the rear of the animal's shoulder is generally accepted as the best aiming point. This shot destroys very little meat, and the bullet, mushrooming in the heart and lung section, kills quickly and humanely.

Once the deer is down the knife and rope come into play. The deer should be placed with its feet downhill, or strung up head first, and field dressed. This means making a long slit in the belly through which the viscera can be removed. Further dressing can be delayed until the better facilities of camp or home are available.

The east of the Blue Ridge counties offer many advantages for this kind of deer hunting.

The season is long. With hunting legal from late November to early January, the fun is spread out, eliminating the concentration of hunters which characterize the brief western season.

Deer grow fat in the eastern farm country, make better venison, and sport bigger racks than their mountain cousins.

The eastern counties are easier to hunt. Secondary farm and lumber roads ribbon the country, making access easier. Getting the downed deer out of the woods is also less of a problem. In most cases it's possible to drive a jeep or truck to the site of the kill. This is particularly helpful to those



spotted the hunter should move only when he is sure it is unaware of his presence. This may mean long periods of standing almost motionless while a fidgety buck settles down.

The consistently successful still hunter makes each move a short one—10 to 20 yards, and when he stops he studies his surroundings thoroughly. Binoculars are handy as they permit closer scrutiny of likely deer cover. This walk and stop process is repeated throughout the hunt.

In moving from one observation point to the next the emphasis should be on the stalking—moving as quietly as possible. Glassing and studying should be delayed until the next observation point is reached.

It is in still hunting that soft clothing pays off. Rubbed against branches and twigs, it does not create a raspy noise as does hard-finish clothing.

While the natural tendency is to search the area ahead only, the hunter should glass all the country he can. He may even catch a sly old buck sneaking away over his back trail.

With the trophy of a lifetime in the sights, it's easy to get excited and snap off a hasty, poorly placed shot—one

Many landowners who object to large hunting parties with packs of hounds take an entirely different attitude when approached by a pair of quiet trail watchers.

with health handicaps.

The venison from a deer killed while browsing or piddling to or from a resting area is considerably tastier than from one bagged while racing pell-mell before a pack of hounds.

The attitude of landowners is different toward this type of hunting. Many who refuse permission to large hunting parties take an entirely different position when approached by a single or pair of hunters.

Unfortunately the image of deer hunting is not good in parts of the Old Dominion. However, the nimrod who earns his deer in the manner described here has not contributed to that image.

For the still hunter or trail watcher, deer hunting is a quality sport—one that permits him to match his wits against America's favorite big-game animal. The buck he bags is the culmination of his know-how, choice of equipment, and rifle practice wrapped up into a successful deer hunt.

And best of all, he has learned the true joy of deer hunting.

# OPPORTUNITY FOR SPORTSMEN

By BERT LINDLER  
*Williamsburg*

THE quail folded at my shot. As I walked over and pocketed my bird I realized that much more important than my kill was the discovery I made that day; for I found that 180,000 acres of woodlands in forty-two Virginia counties were open to public hunting—upon the purchase of a two-dollar permit from The Chesapeake Corporation of Virginia.

Since then I have hunted and walked over several tracts of Chesapeake land and the scarcity of hunters has never failed to amaze me. Indeed, less than two thousand hunters bought these two-dollar permits last year. Even if all two thousand were out on the same day, there would still be an average of ninety acres of land per hunter.

The Chesapeake Corporation, a progressive paper plant



Uncut hardwood stands harbor squirrels, deer and sometimes turkeys.

Due to progressive management practices, a variety of terrain and hunting situations are present. When Chesapeake acquires a tract of land, it bulldozes entire plots which in a year or two are covered with wild grasses, weeds, and briars, producing excellent small game habitat. All unsalable timber is burned in place or shoved into long dense hedgerows that provide cover for quail and rabbits. Five years after a bulldozed plot has been planted in pines, it becomes almost too dense for hunting, but still provides refuge for game. Ravines are left in thick hardwoods, and these areas yield deer, turkey, and squirrel. Though deer are plentiful, deer hunting is often difficult. The nature of the land is constantly being changed by bulldozing and logging, and deer establish no regular patterns of movement and are scattered. On two tracts located in Bedford and Campbell counties, managed in cooperation with the Commission of Game and Inland Fisheries, extensive site preparation work following cutting operations provides superior hunting.

In this era of dwindling hunting lands, sportsmen the state over must realize that hunting is a privilege that has to be paid for. Man has grown accustomed to paying for the plot of land on which he parks his car. Unless more sportsmen realize that they must also pay for the land on which they hunt, about two thousand of them will continue to have exclusive rights to over 100,000 acres of woodlands—a virtually untapped sportsmen's bonanza.

Those wishing to purchase permits should write the Chesapeake Corporation, West Point, Virginia, and enclose two dollars. The corporation will then mail a permit application and maps showing the location of open tracts. This application must be filled out and mailed to Chesapeake, which will then remit the permit—valid from July 1 of one year to June 30 of the next.



Cutover areas scheduled for reforestation provide good quail habitat for several years.

with its main offices located at West Point, Virginia, manages more than 250,000 acres of woodlands in three states. The Chesapeake Corporation started its "multiple land use" program in 1962, and the basic ideas employed then are still in effect. From July 1 until November 1, hunt clubs are allowed to lease desirable tracts for forty cents per acre per year. The majority of the remaining land is marked with white posters and is open to individual hunters who purchase two-dollar annual permits. About 15,000 acres are reserved in Virginia for the use of employees and are marked with green posters. A smaller amount, about two per cent of the holdings, is closed to hunting and is marked with yellow posters.

Fishermen are welcome on Chesapeake's lands. Several lakes have been built and stocked, though at present time they offer no fishing. However, a public boat ramp and picnic area, located on Chesapeake land, provide access to Leesville Reservoir, a relatively new lake which promises to become one of Virginia's best fishing lakes. Camping is allowed only on certain tracts of land, and the camper must first write the company to obtain permission. For obvious reasons, campers are not allowed to build open fires.

Unusable timber and slash bulldozed into windrows in preparing the land for reforestation make excellent rabbit cover.



# AN EVALUATION OF MANAGED

DOVE hunting has become one of the most popular sports in Virginia. Over the past twenty years there has been a tremendous increase in the number of hunters who search for the gray ghosts in September and October. A decade ago it was difficult to accumulate enough sportsmen on a given Saturday afternoon to adequately cover a corn field. Today available dove fields with a concentration of birds are usually overrun with hunters. The immense popularity of dove hunting has created a multitude of interrelated problems for landowners, sportsmen and for the Commission of Game and Inland Fisheries.

With increased competition for available fields and doves, hunters are having a more difficult time practicing their sport. They have had to search more intensively and often drive long distances to locate fields. Many hunters have resorted to leasing fields by the day or season, while others have planted their own dove fields on hunt club property.

Dairy farmers in particular are usually besieged by a multitude of friends and acquaintances starting the fifteenth of September. Later, any picked or hogged-down corn field will ordinarily attract concentrations of doves, and soon thereafter the inevitable horde of hunters will descend. Some good dove fields have been posted, but most landowners will permit free public hunting upon request. However, the practice of charging for dove hunting appears to be increasing in certain sections of Virginia.

During recent years biologists of the Game Commission have initiated a number of experimental projects aimed at solving some of the complicated problems concerned with

Over the past 20 years the dove has become Virginia's most popular game bird.

By C. H. SHAFFER  
*Game Management Field Coordinator*

Commission photos by Kesteloo



dove and hunter management. Virginia's field staff has been carrying out intensive live-trapping and banding programs in an attempt to collect data on dove migrations. During 1966 a total of 3802 birds were banded. These studies are beginning to pay off in significant information collected through band returns from the Southeast. More data is accumulated each year on dove migratory routes, on dates when some Virginia doves depart for the South and when "Yankee doves" arrive in the state.

For many years biologists and other cooperators have been carrying out dove population studies by running dove "coo-count routes" over established roads which had been selected statistically. By continuing these daylight dove studies each spring, it has been possible to accumulate comparable data which indicate trends in state-wide dove populations.

During the early 1960's several southern states began developing experimental fields for doves. The initial hunter success on these areas was good, and the Commission thought the technique might be a valuable asset to Virginia public hunting areas. In the spring of 1963 a number of fields on Virginia's popular public hunting areas were seeded to experimental plantings, designed to make them attractive to doves. There were a number of basic objectives to the study: (1) To evaluate a promising management technique that had been developed and practiced in other southern states; (2) to provide public dove hunting and additional recreation on managed areas; (3) to accumulate data on dove and hunter use of these fields. This article will serve as a progress report and an evaluation of the concept of managed dove fields on the basis of observations made to date.

The technique of planted dove fields is not too different from the traditional seeding of wildlife food patches for other upland game species. For many years Virginia landowners have been planting game bird mixtures and lespedezas in small patches and have noted heavy utilization of the plantings by doves and other wildlife. Dove fields are normally larger (five to ten acres) than the traditional one-

# DOVE FIELDS



On managed dove fields food plantings are alternated with bare "landing strips," since the birds do not like to fly directly into and out of dense vegetation.

eighth acre food patch. The basic ingredient of a dove field is usually brown-top millet, planted in rows, and cultivated periodically during the growing season. Brown-top and German millet, along with the common fox-tail grass, are highly preferred dove foods. They have a short growing season, the seed ripens early and readily shatters onto the ground where it is available to feeding birds. Cultivation naturally helps to eliminate weed competition, assuring a heavier production of the desired seed.

Ordinarily, in planting a dove field only half of the field is actually seeded. The field is seeded in strips with the alternate strips left bare to permit easy entrance and exit by feeding doves since they don't like to fly in and out of dense vegetation. These unseeded sections of the field should be disked periodically throughout the summer to eliminate invading vegetation. It has been observed that doves have a strong preference for fields with an abundance of bare ground. Conversely, doves are seldom found in fields with thick ground cover.

Each year refinements have been made in the original concept of millet dove fields. A late seeding of wheat in the disked strips provides an additional incentive for the doves during the following autumn. This technique also furnishes green grazing for deer, turkeys and rabbits throughout the late winter and early spring seasons. When sufficient land is available, a field can be laid out in a four-year rotation to provide food and cover for all species of wildlife without depleting the soil. Some game managers have implemented the millet and wheat plantings with rows of corn, milo, and buckwheat.

Several years ago Jim Engle, Commission forester and biologist, made a significant observation which helped to revolutionize the whole concept of managed dove fields. He noted that in some sections, Virginia farmers often planted a mixture of German millet and soybeans for a late hay crop. It was observed that after the mixture was cut, raked,

baled and removed, doves concentrated in large numbers to feed on the millet seed that had been accidentally shattered on the ground during the haying operations. It was suggested that this entirely normal and legal method of crop manipulation be practiced on public managed areas, with the resulting hay crop being harvested by local farmers on shares. The hay would thus pay for the entire planting operation, and the dove hunting which it provided would be an incidental by-product. This technique has been tested at Camp Pickett and on the Powhatan Management Area. The results obtained have been rewarding. On Commission-owned Elm Hill and on the Powhatan, corn land has also been leased to adjacent farmers, creating dove fields at no cost to the sportsmen.

It is believed that an important part of the managed dove field program is the regulation that permits dove hunting on only two days of the week, usually on Wednesdays and Saturdays. It was theorized that everyday gunning pressure would force the birds to move to better protected fields or to migrate southward. This regulation should help to keep the fields from being overshot.

From a rather modest beginning, the experimental program on dove management fields has been gradually expanded. During the spring of 1965 a total of 38 fields were planted on seven game management areas (see Chart I). A combined total of 361 acres were seeded and developed. Additional fields were seeded in the spring of 1966, and more dove hunting fields were made available to the public through cooperative agreements with landowners in Orange and Franklin Counties.

In order to obtain data from the managed fields check stations have been maintained near important dove hunting areas on Wednesdays and Saturdays.

There are many different criteria for appraising or judging the success of a particular venture, experiment or technique. The experimental dove fields should be examined first from a cold, statistical standpoint. This data can be found in Chart I for those interested in hunter success, dove concentration, hunter concentration, crippling loss and similar data. Comparisons can be made from area to area. It will be readily observed that the Camp Pickett fields have yielded a higher dove per hunter success ratio than the fields on the other management areas. The lowest success ratio was obtained by sportsmen on the Powhatan Management area. Kerr Reservoir and Elm Hill dove fields have yielded good per hunter success, especially the first year they were opened to hunting.

The hunting pressure per management area was recorded as hunters per acre of dove fields. Here the Powhatan Area,

Any picked-over or hogged-down corn field will attract a concentration of doves and, inevitably, a concentration of hunters.



**Chart I**  
**DOVE HUNTING DATA—1965**  
**EXPERIMENTAL FIELDS, SEPTEMBER-OCTOBER**

Management Area	#Fields	Acres	Dove Kill	Crippling Loss	No. Hunters	Doves per Hunter	Doves per Acre	Hunters per Acre
Pickett	9	98	3,066	*	485	6.3	31.3	4.9
Powhatan	4	22	204	*	234	.8	9.3	10.6
Quantico	6	24	421	.41	200	2.1	17.5	8.3
Elm Hill	5	100	1,306	367	324	4.0	13.1	3.2
A. P. Hill	6	55	604	236	283	2.1	11.1	5.1
Kerr Reservoir	5	50	1,042	350	228	4.5	20.8	4.6
Cumberland	3	12	250	*	100	2.5	20.8	8.3
TOTALS	38	361	6,893	994	1,854	3.7	19.1	5.1

\*Data not recorded.

closest of the dove fields to metropolitan Richmond, attracted the highest number of sportsmen even though dove concentrations were lowest.

A discouraging statistic is that concerned with crippling or hunting losses. This figure likewise varies with the management area, the type of terrain and the abilities of the individual sportsmen to shoot accurately. The data collected to date during the experiments indicate that crippling losses are a most significant factor in reducing the available dove populations. In an effort to reduce the losses game managers have mowed the thick cover in the immediate vicinities of the dove fields.

The number of doves collected per acre of millet field during the 1965 season is a most amazing statistic—an average of 19 birds per acre. A quail per acre has long been considered the best that game managers could ever produce even under optimum conditions. More hunters can obtain more shooting on a unit acre of dove field than in any other type of hunting. This undoubtedly helps to account for the growing popularity of dove shooting.

Without a doubt, the best results obtained during the experiment were in the 1964 early season on the Soudan Area on the Kerr Reservoir Management Area. A rather small field of 7.8 acres had been seeded in rows to brown-top millet during early June. The field was cultivated twice during the summer; and prior to the opening of the dove season meandering hogs from an adjacent farm caused a great deal of damage to the planted millet. However, doves concentrated in this field during the entire early season; at times several thousand birds were observed in the area. Altogether, 173 hunters shot the field on Wednesdays and Saturdays, and a total of 1,157 doves were collected for an amazing average of 148.3 birds per acre. In addition 244

lost or crippled birds were reported, which would total 179.6 doves collected per acre of managed millet field. These fantastic results will be difficult to top. At the same time fields planted in the same manner as the Soudan fields have failed to attract many doves or provide much public hunting. It may be significant, too, that the success ratio on the Soudan and other good fields has retrogressed since the 1964 season.

Reports following the first three days of the 1966 early dove season indicate that dove populations and hunting success ratios are somewhat lower than in previous years on all management areas but Quantico Marine Reservation (see Chart II).

Why some fields attract doves while others with similar treatment and abundant food obtain negative results is still a matter of conjecture. It has been suggested that doves are not unlike migratory waterfowl that tend to accumulate in certain areas every year if they find food, protection and other habitat requirements. In Piedmont Virginia it has been observed that doves readily utilize high ridge fields with public utility lines.

It is obvious that dove populations on any one area depend on a number of factors—namely, number of breeding birds, nesting success, time of migration, influx of migrating doves from northern states, weather, hunting pressure, and competition from farmland in the general vicinity of the managed dove fields. It is extremely difficult to regulate effectively any of the above factors. Accordingly, dove fields as a wildlife management technique will always be somewhat unpredictable. Some sportsmen who have experimented with dove fields on their lands have experienced disappointment in the number of doves attracted or the lack of hunt-able populations, especially the second or third years. There are some indications that when local doves are shot hard for a number of Saturdays and Wednesdays there is a possibility that future years' breeding populations may be adversely affected.

The Game Commission is naturally interested in providing as much recreation to sportsmen as possible but not to the detriment of a game population. Wildlife harvest must always be on a sustained yield basis. We want to stress the fact that much is still to be learned about dove field management. Dove fields are obviously not a panacea for all farms in every county in Virginia. In conclusion, the jury is still deliberating on managed dove fields as a wildlife management practice. Whenever additional data can be collected and analyzed, you, the public, will be kept informed of our verdict on the technique.

**Chart II**

**HUNTING SUCCESS ON MANAGED AREAS**  
September 17, 21, 24, 1966

Area	No. Hunters	Doves Harvested	Doves per Hunter	Doves per Hunter
		1966	1965	
Camp Pickett	214	1,079	5.04	6.3
Hawfield	228	766	3.4	*
Elm Hill	211	347	1.6	4.0
Kerr Reservoir	74	250	3.3	4.5
Quantico	83	244	2.9	2.1
A. P. Hill	108	90	.83	2.1
Powhatan	214	155	.72	.87

\*Not open

# Virginia's Vintage



## Waterfowl Decoys

By J. CREIGHTON RIEPE, JR.  
*Charlotte Court House*

TODAY'S average duck hunter, as he awaits waterfowl to approach his stool of plastic, rubber or other factory made decoys, is probably unaware that artificial bird lures date back to about 1000 A.D. Although many materials have been used in producing wildfowl decoys, it is generally agreed among old-time, experienced hunters that no material surpasses wood such as cedar and white pine, which were extensively used by decoy carvers between about 1810 and 1930. The era of hand-made decoys is nearing its end. Lem and Steve Ward, brothers of Crisfield, Maryland, are probably the most famous of the old-time living decoy carvers. The Wards still turn out highly realistic counterfeits entirely by hand. Steve is the carver and Lem the artistic painter.

Excavations of the Lovelock Cave, Lovelock, Nevada, between 1911 and 1924 revealed canvasback duck decoys made by American Indians almost 1000 years ago. These decoys were extremely well preserved and were made of tule (reeds), painted with plant dyes and decorated with bird feathers. The Indians also used stuffed bird skins for lures. Needless to say, decoys of these materials, while undoubtedly very effective, were not very durable.

Today decoys are made of many materials, all of which have certain advantages—and disadvantages. Practically all of the wooden decoys being made currently are turned out on duplicating lathes. Although there is a certain amount of handwork involved in finishing and painting these lures, they are not, strictly speaking, handmade products, such as those which will be discussed in this article.

While records indicate that wooden decoys were used as early as about 1808-1814, the greatest production period for handmade artificial birds was between about 1850 and 1918, when market gunning was outlawed. Most wooden decoys were solid, but some were hollowed out to lighten them. In the Barnegat Bay, New Jersey, area practically all decoys were hollow. In the Chesapeake Bay area in Maryland the lures were all solid.

In 1918 a New York architect by the name of Joel Barber "collected" an old decoy on Long Island. This was the first

of hundreds of old decoys Barber collected until his death in 1952. In 1934 Barber had a book entitled *Wild Fowl Decoys* published by Windward House, Inc., and with that work became the first recognized decoy collector. On his death Barber's collection went to the Shelburne Museum at Shelburne, Vermont, where it may be seen with several other collections of note. The first National Decoy Show was held at Bellport, Long Island, in 1923 and Barber's collection was entered in that show.

One of the top authorities on decoys today is William J. Mackey, Jr., of Belford, New Jersey, who has been collecting for about forty years. Mackey, who has a collection of something like 6,000 birds, including shore birds, waterfowl of all types, and confidence decoys, published a book in 1965 entitled *American Bird Decoys* (E. P. Dutton & Co.). In recent years much interest has developed in collecting old decoys—a bit of Americana—which is fast vanishing from the American scene, never to return. Another recent publication is Adele Earnest's *The Art of the Decoy*, published by Clarkson N. Potter, New York.

Many fine decoys were made along the Atlantic seaboard, from Maine to North Carolina, with probably the finest having been made between Massachusetts and Virginia. Old decoys from each area usually bear certain distinguishable characteristics. However, it is sometimes difficult to relate the early work and later work of a carver due to the fact that many recognized makers changed their style as they became more familiar with the birds they were duplicating and improved their skills as they gained experience. In only rare instances did a maker sign his work, although many decoys are found which bear owner's marks.

In the mid-1830's a man named Nathan Cobb sailed out of Cape Cod with his family on a schooner, headed south where he hoped to find a more favorable climate for his ailing wife. Just north of the Virginia Capes a storm forced the ship to seek harbor where she ran aground at a point between what are now the towns of Oyster and Eastville on the Eastern Shore. The Cobbs had four sons, Nathan, Jr., Warren, Albert, and Elkenah. Nathan Cobb built a home and established a store which prospered, but life inland was not adventurous enough to suit this hardy New Englander. He gave up the store and went into the business of salvaging grounded ships off the coast. This, of course, was a booming business in those days, when almost all transportation was by water. One of the islands off the coast of Virginia intrigued Nathan, who saw it frequently in his salvage operations. He also often hunted shore birds and waterfowl there. One day Nathan discovered an unusual brown liquid on the island. He found that boiling the liquid produced

Old Virginia decoys by unidentified makers. Left, oversize swimming black duck with leather thong and extra weight under breast. Right, black duck of normal size. At top of page, a common merganser (left) and rare old hooded merganser.

Commission photo by Kesteloo



(Continued on page 14)

## CONSERVATIONIST OF THE YEAR



Commission photo by Kesteloo

CHESTER F. PHELPS, Executive Director of the Virginia Commission of Game and Inland Fisheries, was named "Conservationist of the Year" at the Governor's Conservation Achievement Awards ceremonies in Richmond October 21. Governor Mills E. Godwin, Jr., left, personally presented awards to Phelps, right, and 9 other winners in individual conservation categories.

A number of successful programs initiated and pushed by Phelps were cited as basis for his selection by the Virginia Wildlife Federation for the top state award. Among these were successful restoration of deer and turkeys over much of the state, acquisition of some 140,000 acres of public hunting lands, negotiation of cooperative wildlife management agreements on 270,000 acres of private and government land in Virginia, development of public fishing lakes and access sites, modernization of game and fish stocking policies and practices, and the continual upgrading of personnel performance standards.

Other award winners included: Charles S. Hooper of Crewe, Wildlife Conservationist of the Year; Edward L. Felton of Holland, Soil Conservationist of the Year; William F. Vaughan of Keysville, Water Conservationist of the Year; Thomas M. Brooks of Quinton, Forest Conservationist of the Year; Lillian S. Schilling of Afton, Conservation Educator of the Year; John Winston Holmes of Buckingham, Youth Conservationist of the Year; State Senator FitzGerald Bemiss of Richmond, Legislative Conservationist of the Year; Boyce Loving of Charlottesville, Conservation Communications of the Year; and the Virginia Association of Soil and Water Conservation Districts headquartered in Moneta, Conservation Organization of the Year.

Recipients of these Virginia awards will be eligible for similar national awards in their respective categories. The state and national Conservation Achievement Awards Program is sponsored by the National Wildlife Federation and the Sears-Roebuck Conservation Foundation to give proper recognition to conservation efforts. The awards themselves are beautifully sculptured statuettes of American wildlife species.

000 pheasants part crosses between neck and chest, have been four species in the Old Dominion September, 1966. These rare birds are in County, Surry and County, of work personnel, U. S. Bureau of Fisheries and Wildlife and the Virginia Commission of Game and Fisheries to accomplish or December 5, 1957, and four cocks of the Iranian strain on December 7, 1966. From these birds, Iranians were sent to Ohio and Missouri and 16 eastern Iranian Mississippis for United States are 18 hen Japanese green pheasant were flown to mission

# VIRGINIA WILDLIFE CONSERVATION GRAM

Commission Activities and Late Wildlife News . . . At A Glance

**PICKETT AND HAWFIELD HOTTEST DOVE AREAS.** Hunters bagged about 5 doves apiece on opening day at the experimental dove fields developed cooperatively by the Commission of Game and Inland Fisheries on Camp Pickett and Hawfield wildlife management areas, according to reports from Commission biologists. Gunners on the Elm Hill area, last year's hot spot, found the birds considerably more scarce than last year when they downed 1,150 during September.

On Quantico hunter success varied between 2½ and 4 birds per hunter during the first 5 open days. Powhatan dove hunters averaged less than a bird apiece on opening day, but reports indicate that dove success improved there last year during the second half of the split season.

**STOCKING NOT ALWAYS BOON TO FISHING.** Contrary to popular belief, restocking waters where fishing has deteriorated is no cure-all and may, in many cases, cause even poorer fishing. Restocking is successful only when young native fishes are scarce or absent, but lack of reproduction is seldom the cause of poor angling success. Neither state nor federal hatcheries normally stock catchable size pond fish species. Adding more fish to waters already overpopulated with undersized bass and bluegills can increase competition and suppress growth even more.

Overharvest of adult bass is one of the prime causes of poor fishing, especially in smaller ponds subjected to heavy fishing pressure. With no large bass to reduce their numbers, the prolific bluegills will multiply until there are too many for the available food. A 12- or 14-inch minimum size limit on bass is the most effective tool discovered to date for combating this situation. Draining or poisoning the pond and then restocking with proper numbers of fish can, in many cases, speed up the recovery process.

Another problem that can cause poor fishing is excessive competition from trash fish. Treatment with selective chemicals can eliminate these without harming game fishes and restocking is seldom required. Weeds can provide too much cover for forage fishes like bluegills and allow them to overpopulate as well as mechanically interfering with angling. Chemical treatment is effective in small ponds. Drawing down ponds about one-third during the winter months exposes unwanted weeds to the winter elements and concentrates forage fish where bass and pike can more effectively keep their numbers in check.

The Commission of Game and Inland Fisheries does not supply fish for stocking private ponds. Fish are available from federal hatcheries for this purpose, but are supplied only for new ponds or when an investigation shows that restocking of older lakes is desirable. Application for fish can be made through any local County Agent or Soil Conservation Service representative.

**COMMISSION PERSONNEL BAND 1,178 DOVES.** Virginia Commission of Game and Inland Fisheries banded 1,178 doves prior to the hunting season this fall. This makes the third year that the Virginia Commission and fish and game agencies from other southeastern states have cooperated with the U. S. Fish and Wildlife Service in banding doves for analysis of mortality and movement.

A specified number of birds are banded in each state before the season opens; then a similar number are banded after the season. The percentage of these bands returned gives an indication of hunting season mortality while the pattern of the returns gives indication of movement.

The results of the first year's efforts showed that 5.2% of the pre-season bands were returned compared to only 1% of the post-season bands. A few summer banded birds from Virginia were killed in Georgia, Florida, South Carolina, and Alabama during the latter part of the season, but 86% of the band returns were from within Virginia.

## Virginia's Vintage Waterfowl Decoys

(Continued from page 11)

salt, a rare commodity in 1838. Nathan then traded several hundred bags of salt to the owner for the island, which today is known as Cobb Island. The Cobbs razed their home on the mainland, moved it to the island and rebuilt it. Mrs. Cobb did not long survive. The sons grew up and married and Nathan, Sr., remarried. All these families made a good living on the island. Seafood was plentiful, and probably nowhere on earth were there more shorebirds and waterfowl.

The Cobbs became market hunters furnishing black ducks, brant, canvasbacks, redheads, and pintails, for the markets to the north. For close shooting the Cobbs used guns having 32" barrels; for long ranges their barrels were 36"-38". As times changed and brought the advent of the sportsman, the Cobbs established a club on their island. The shooting was unsurpassed, and we are told the facilities also



Canada goose by Dave Watson.



Above, hollow brant by Dave Watson. Below, pintail by Doug Jester.



left nothing to be desired. In the 1870's Jefferson Davis, former president of the Confederacy, shot regularly at the Cobb Island Club. Nathan, Sr., died in 1890. In the mid-1890's a tidal wave swept the island and destroyed the club facilities, which have never been replaced.

All of the Cobbs must have made decoys, but Nathan Cobb, Jr., seems to have been the most prolific producer and the one who made the finest decoys. Without a doubt, he is the most famous of the Virginia carvers and the oldest recognized Virginia maker. The Cobbs were among the very few who signed their work N for Nathan, A for Albert, and E for Elkenah. The initials carved in the bottoms of the decoys were as precisely carved as the birds themselves. Nathan Cobb produced both hollow and solid decoys. Frequently raw materials were picked up along the beach and sometimes consisted of spars from shipwrecks. Nathan searched the beaches for roots from which he could carve heads for his decoys. The roots of the holly tree were particularly adaptable to this use as the wood was not easily split or broken. Sometimes bills of white oak were carved

and tenoned into the head. White cedar was also a very desirable raw material for decoy bodies.

Generally, the natives of the Eastern Shore did not exercise much care in the making of their lures. Many were crudely made and poorly painted. Such was not the case with Nathan Cobb, Jr. The Cobb decoys always had the wings and tail carved prominently in a very lifelike manner. The heads were placed in many different, natural poses. Glass eyes were imported from Germany. Balance weights were attached with brass screws rather than with nails. Painting was not elaborate, but extremely realistic. The wood for the bodies was so carefully selected that Cobb decoys 100 years old still have not cracked or split.

Toward the end of the Cobb era the demand for decoys at Cobb Island reached such proportions that the Cobbs could no longer fill their needs themselves. Decoys were made for them by other makers and were branded COBB. These decoys, some of which were made by recognized carvers, are not, of course, genuine Cobb products. Many of the decoys imported to Cobb Island were hollow and were produced by Harry Shourdes (1871-1920), of Tuckerton, New Jersey. Shourdes is believed to have made



Above, canvasback by Lee Dudley. Right, scaup, hollow brant, goldeneye and black duck by Ira Hudson, all in original paint; and bufflehead and merganser by Miles Hancock.



Hissing goose by Ira Hudson with original paint preserved.

more hollow decoys, practically without help, than any other maker.

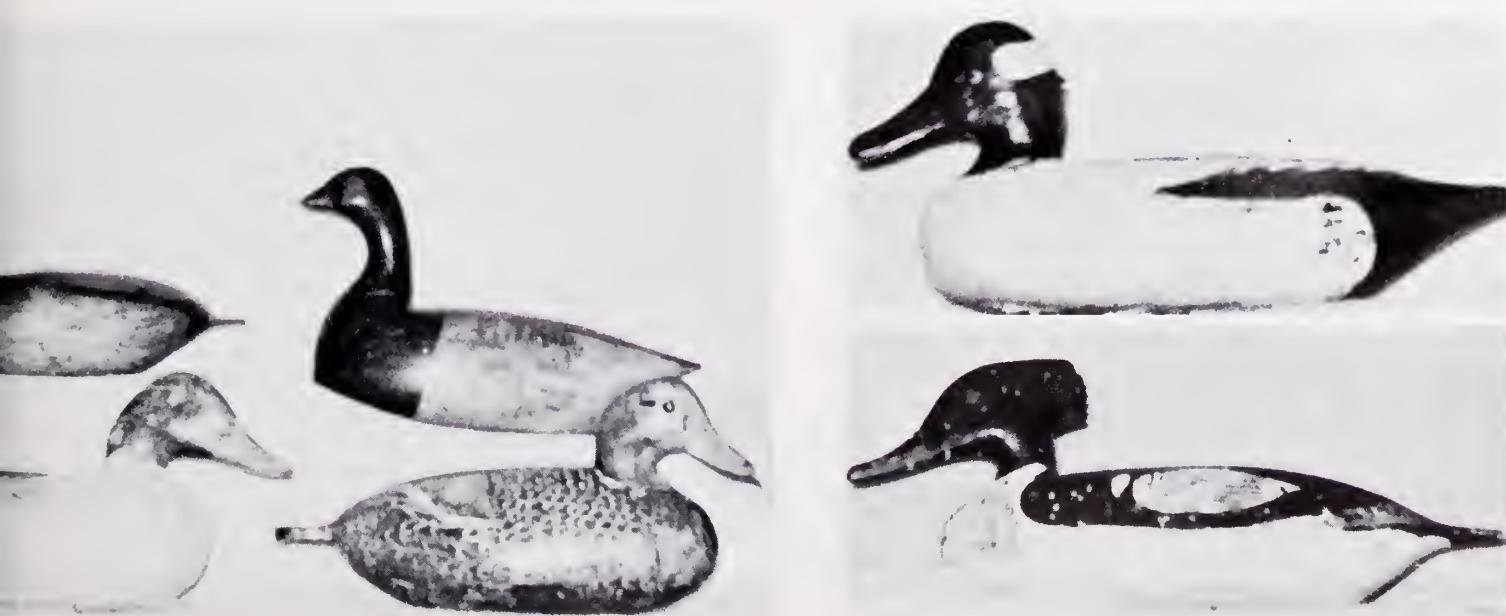
A little north of Cobb Island lies Hog Island, where a carver by the name of Walter Brady lived. Brady specialized in geese. He was a market hunter until 1918 when the law prohibited this occupation, driving him out of business. The goose illustrated is believed to be about 90 years old. It is hollow, and the wing and tail carving reveals the Cobb influence. The head and neck are carved from a root, and the bill is of white oak, tenoned through to the top of the head. Brady died at an advanced age in the 1940's.

Ira Hudson of Chincoteague is probably the best known of the Virginia decoy makers. Ira was born at Selbyville, Delaware, in 1876. Twenty years later he married a Chincoteague girl and settled down on the Eastern Shore where he established himself in the boat building and decoy trades. Many of the old decoy makers plied their trade primarily for themselves or their neighbors, but Hudson sold thousands of his decoys from coast to coast in the 40 years he produced artificial birds. Ira also made several grades of decoys, which was very unusual in his day.

Hudson was apparently not as particular as he might have been in the selection of some of his raw materials, as many of his decoys cracked or split. When the preferred cedar or white pine were not available, Hudson used other woods. Ira turned out fine decoys and produced realistic paint patterns. He was a recognized maker by 1900 and in later years was assisted by his son, Norman. Hudson made both hollow and solid birds. He turned out ducks, geese, brant and shorebirds. Today brant represent a very small percentage of the waterfowl bag. Seventy-five years ago they were important commercially. Brant shooting was usually carried on in the spring, when these birds decoy much more readily than they do in the fall of the year.

In his early days Hudson sold buffleheads and mergansers for \$3.00 per dozen; redheads, scaup, canvasbacks, and black ducks brought \$4.00; brant were \$6.00 and geese \$8.00 per dozen. During his later years prices were better. Ducks brought \$22.00, brant \$24.00, and geese \$36.00 per dozen. Using mainly North Carolina white cedar, Hudson could turn out six dozen decoys a week. Ira won first place two consecutive years with his entries in New York decoy

(Continued on next page)



## Virginia's Vintage Waterfowl Decoys

(Continued)

contests. At one point Ira received a single order for 1500 decoys. Sometimes he took in 1000 decoys at a time for repairs and re-painting. A younger son, Delbert, helped him in later years. Ira Hudson once told Lem Ward he figured he had made about 25,000 decoys in his lifetime. Ira Hudson died in 1949.

A protege of Hudson's was a man by the name of Miles Hancock, who still lives at an advanced age on Chincoteague Island. Hancock is perhaps better known for his diamond-back terrapin business than decoys, but until last year he was still producing handmade decoys on a limited basis. Hancock made some of his birds from cottonwood. When it was still lawful, Miles was a market gunner and was a specialist in waiting for two ducks to cross so he frequently downed two birds with one shot. He owned the first automatic shotgun on Chincoteague Island.

Another excellent decoy maker from Chincoteague was Dave "Umbrella" Watson, who also made both hollow and solid decoys. Watson was not as prolific a carver as some of the other men, but did a better than average job on his birds. His nickname stemmed from the fact that he always carried an umbrella—rain or shine. When asked about this, he always replied that any fool had enough sense to carry an umbrella when it was raining. Watson died in 1938.

Doug Jester, another native of Chincoteague, made decoys, but his work was not quite up to that of some of his neighbors, although he did produce some very nice mergansers, or "hairy heads" as the natives call them.

For some unexplained reason the western shore of Chesapeake Bay failed to produce any old decoy carvers of note, except at Havre de Grace, Maryland, at the head of the bay. Certainly in this vast area there must have been some good decoy makers, but the collectors have not been able to locate any of their work.

Leaving the Eastern Shore of Virginia, as the ducks fly, a flight across the Bay from Cape Charles to a point a little south of Cape Henry, brings the waterfowl to what was one of the finest areas on the Atlantic coast for ducks and geese. This is, of course, Back Bay, which Virginia wild-fowlers are hoping will again attract waterfowl in abundance. Seawater is being pumped into the shallow, freshwater bay, which is separated from the Atlantic Ocean only by sand dunes. The introduction of the salt water into Back Bay, it is hoped, will produce enough salinity to clear the water which would, in turn, provide sufficient light to permit the grass to become reestablished in the bay. For about ten years, little grass has grown in Back Bay, and for this reason few ducks and geese have been able to winter in the area.

Most of the decoys produced in the Back Bay region were oversized, crudely made, and poorly painted. However, there were several notable exceptions to this generalization. A man by the name of John Williams (1857-1937) lived on Cedar Island in the bay, and this island was situated directly on the flyway between Back Bay, Virginia, and Currituck Sound, North Carolina. Williams turned out some masterful decoys, particularly swan and ruddy ducks. Unfortunately, few of these decoys have survived. Williams is believed to have made decoys only for his own use.

Several miles south of Cedar Island lies Knott's Island, of which the northern tip belongs to Virginia, but most of which is North Carolina territory. On Knott's Island in

1861 twin brothers, Lee and Lem Dudley, were born. Sometime in the 1920's Joel Barber visited Lee Dudley and obtained a pair of his fine ruddy duck decoys, bearing the initials L.D. burned into the bottom. The Dudleys were market hunters and made canvasbacks, redheads, scaup, widgeon, and pintails in addition to ruddies. Apparently the Dudleys made no decoys before 1892. It is now believed that Lem probably made more decoys than Lee, but Lee has received more recognition.

William Mackey in his *American Bird Decoys* has this to say about the Dudley decoys: "Mounted on smallish, competently carved but on the whole very ordinary bodies, are the most beautifully conceived and splendidly carved heads ever placed on duck decoys." This is high praise indeed for Back Bay carvers, and their work is all the more remarkable in view of the fact that they had no decoys of excellence to copy in their very remote area. Lem Dudley died in 1932, and Lee survived his brother by ten years.

Sink box or battery gunning for diving ducks—canvasbacks, redheads, and scaup—was practiced in only a few areas, notably Great South Bay, New York; the Susquehanna Flats at the head of Chesapeake Bay in Maryland; in Back Bay, Virginia; and in the coastal sounds of North Carolina.

Most batteries were built to accommodate one man lying down, but in Back Bay and Currituck Sound some "sit up" boxes were used. These sink boxes were weighted with cast iron decoys, known as "wing ducks," to lower them to the safest level depending on the weather conditions. Many of the iron decoys were cast with a hole in the tail to which a line and small buoy could be attached, which would enable the gunner to jettison them in the event of a sudden squall which threatened to fill the box with water. The decoys could then be retrieved under more favorable circumstances. Apparently the cast iron decoys were produced in only three foundries along the Atlantic seaboard—one of which was located in Perryville, Maryland, one at Elizabeth City, North Carolina, and one at Norfolk, Virginia. The wing duck illustrated was used at Back Bay and weighs 38 pounds.

The makers of many fine old decoys are unknown. The men who carved decoys were simply making tools to be used in a trade. Certainly, no decoys in the early days were ever made with the thought in mind that they would one day become collectors' items. Illustrated are several old Virginia birds—makers unknown.

The tools of the decoy carvers were relatively simple, consisting of hatchets for roughing out the bodies, draw knives, rasps, spokeshaves, pocket knives, and sandpaper. Later band saws were used for roughing out heads. There were many variations in painting patterns, depending upon the way the artist visualized the bird he was duplicating and upon his ability. Methods for creating the feathered effect also varied, but few old gunners required this minute detail, as long as the overall effect was reasonably accurate. Market hunters probably figured that by the time a duck was close enough to see the feather detail he should be dead.

When Joel Barber said, ". . . of all birds subject to attraction by decoys, I am perhaps, the most susceptible bird of all," there may have been a half dozen decoy collectors in the country; today there are possibly 500, all of whom probably feel Barber aptly expressed their sentiments a generation ago.

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All decoys illustrated are from the author's collection.

# BUILD A BETTER FISH POND

By R. V. CORNING  
*District Fish Biologist*

THE acquisition of old mill ponds and other old impoundments by private sportsmen's clubs is just about complete in the Tidewater area of Virginia. There just aren't many such ponds with any fishing potential left to acquire. Yet, the demand for membership in private angling clubs continues to increase as the population of our cities and suburbs grows. Apparently, just as the Commission of Game and Inland Fisheries is faced with the development of new public fishing waters to meet the demands of a burgeoning number of licensed anglers, so private fishing club members will soon have to seek a similar solution to their supply and demand problem.

Many fishing club ponds in Virginia are noted for producing large-sized game fish. They are also noted for their low overall productivity in total pounds per surface acre, and the major reason for this small total production of fish usually is a lack of natural pond and watershed fertility. This lack of fertility in many older club ponds can be only partially offset through artificial fertilization. A large volume of water passing through these ponds tends to carry fertilizer materials downstream prior to utilization by pond inhabitants.

Many of the construction and management methods developed by the Commission of Game and Inland Fisheries for the public fishing lake program can be utilized to advantage in the development of new private fishing club ponds. Based upon these methods, club ponds can be expected to produce standing fish populations of 350 to 450 pounds per surface acre and yield sustained annual catches of 140 pounds per acre. Few older club ponds support a standing population of more than 180 pounds per surface acre, with many below 150 pounds, and few yield annual catches of more than 30 pounds per acre.

Burke Lake in Fairfax County is one of the Commission's newest public fishing lakes. In 1964 approximately 440 fishing trips per surface acre were made to Burke Lake. Yet in 1965 this body of water still yielded a high success ratio



Commission photo by Kesteloo

Methods developed by the Commission can be used by private clubs.

and produced 13 of the 27 citation sunfish registered in Virginia that year. Management of a pond of this nature, as a club pond with controlled fishing pressure, would produce outstanding fishing.

Initial pond development planning, like private home construction, requires consideration of the amount of money or financing available.

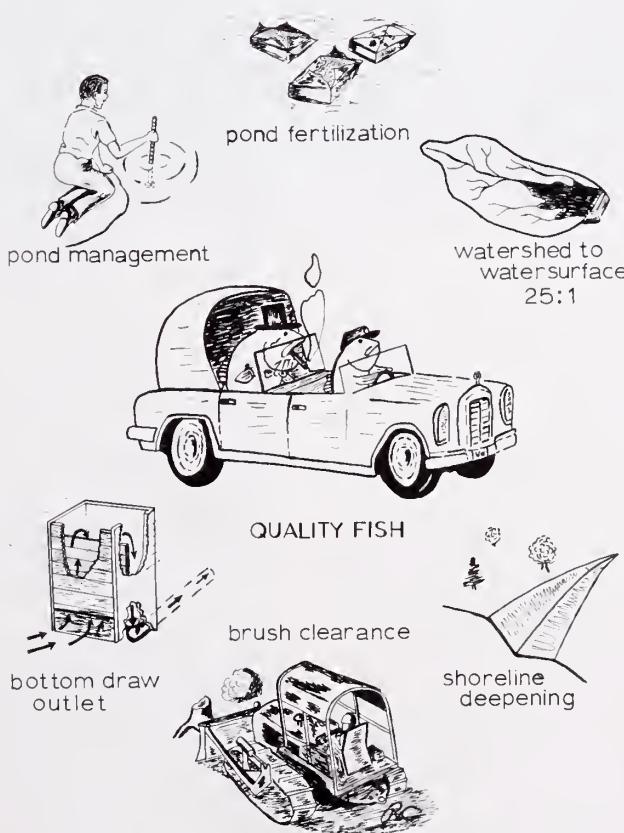
Funds, along with numerous other factors, will in many ways influence pond size, site selection, biological suitability, construction methods, and overall success.

Probably the most important single factor in determining a newly constructed pond's success as a fish producer is its ability to obtain maximum benefits from a fertilization program. Experience has shown that the watershed area providing water for a pond cannot exceed the pond surface area by a ratio greater than 25:1 if maximum benefits are to be derived from the application of fertilizer.

Ratios as low as 10:1 have given excellent results. The less water flowing through a pond after fill and evaporation rates are met, the less expensively and more efficiently it can be artificially fertilized. The selection of preliminary pond sites is therefore dependent upon finding sites near enough to the headwaters of a drainage so that a proper watershed to surface area ratio can be met without having to construct a pond of undue size.

Fertilizer storage facilities should be considered during the planning stages. If a boat house is planned, the storage shed can be included as an integral part. Buying fertilizer in bulk quantities means a savings in cost, and means the fertilizer will always be on hand when needed. Storage space for a year's supply of fertilizer for a 30-acre pond would require enough space for approximately 240 forty-pound sacks, if fish pond fertilizer is used.

Pond size has a direct bearing on the cost of any pond development. Land value, size and height of dam required, and amounts of fertilizer needed annually are just a few of the related variables. Additionally, pond size may deter-



mine the overall success of pond management.

Public ponds below 50 surface acres have proven hard to manage properly. Various reasons for this lack of success have been given. The reason currently considered most valid is the ability of the public to overfish a bass population in a smaller pond. An over-reduction in the bass population causes a lack of predation upon bluegill and other forage species, allowing these species to overpopulate and create stunting. Larger waters disperse fishermen more and provide a better buffer against bass depletion.

Since private ponds usually are not fished as heavily as public waters, club ponds of somewhat less than 50 acres sometimes may be managed successfully. Naturally, the more water surface available per angler, the greater the weight and number of fish per individual angler that can be taken. As a rule, there should be at least one acre of intensively managed fishing water for each 5 club members.

How important is the water supply? Water entering ponds must be free of toxic chemicals and gases, natural and otherwise, which might kill fish. In general, most drainages in the Tidewater area are chemically suitable. Even swampy streams that are exceedingly acid may still be used if the pond is adequately buffered with crushed limestone. However, the services of a fishery biologist should be enlisted to check upon water suitability.

Once initial sites have been selected which meet the foregoing criteria, a consulting engineer should be consulted. He will be able to determine whether the sites have suitable soils for dam and bottom requirements, suggest construction methods, estimate construction costs, and supply other needed information.

### Pond Construction

All ponds should be constructed with a means for draining. A built-in fish collection system at the lower end of the outlet pipe should also be installed. In the advent of unique competition from undesirable fish species, or improper "pond balance," the pond can be drained and the fish collected in the fish collector box. They can then be sorted, and the proper balance restored in the pond.

One of the greatest burdens most old fishing ponds now impose is the constant need for weed control. New ponds can be constructed so as to make this problem less burdensome, as they, in turn, grow older. Usually, the most weed-infested ponds have large areas of shallow water. Sunlight penetration to the bottom of these shallow sections encourages weed infestation. Proper fertilization in a pond designed specifically for fertilization will produce an abundance of minute plant life—the key to fish production. These microscopic organisms slightly cloud the water and help to shade the pond bottom and prevent the establishment of rooted aquatics. But pond fertility alone will not keep the pond free of weeds if many shallow pond sections are present. Deepening of shorelines where needed and the elimination of shallow areas are required if a pond is to be kept free from nuisance and

"fertilizer hogging" plants. Any shorelines having a natural slope of less than 10 horizontal to 1 vertical should be deepened, as should any coves or shoals under two feet deep. When such modifications are required, they must be taken into consideration in determining total pond construction cost.

Should trees and brush within the pond site be removed? Trees, stumps, and brush piles create hiding places for fish, but, unhappily, too many of them interfere with the harvest. Removal of trees, stumps, and brush is recommended, except for a few carefully chosen places. These remaining "shelters" tend to concentrate certain fish species and assist in their harvest. Contrary to a widely held belief, small fish do not need these shelters to protect them from predators.

Bottom draw overflow structures are advocated for normal water flow release. A structure of this type allows normal pond overflow to be taken from the bottom, rather than from the top of a pond. When inorganic fertilizer is applied in the proper manner, it is usually taken up by plant life long before it settles to the unlit and non-productive lower depths. Where surface water is allowed to overflow, costly fertilizer is allowed to leave the pond. When bottom water is released, only the non-oxygenated, lower water (uninhabited by plant and fish life) is replaced by fresh water entering the pond.

### Pond Management

Proper pond management begins in the planning stages, proceeds through construction, and reaches full swing at the closing of the gate upon pond completion.

Creek waters flowing through the impoundment should be treated at gate closing in order to kill all trash fishes that might be present. This is important, for any fishes remaining will become direct competitors with stocked species. Also, since many will be older than the artificially stocked fishes, they will be able to lay

many thousands of eggs before the young bass and bluegills reach maturity. Under such a handicap the game and panfish populations do not stand a chance. Whenever the drainage system is small above a pond, and stream waters support no game fishes, these waters should also be treated—but only with Game Commission approval.

Powdered rotenone, available at most farm supply dealers as a 5 percent wettable powder, is used for fish eradication. This substance is non-toxic to humans but is highly toxic to fish, killing at very light dosages. Treated waters should be allowed to collect behind the dam, for if the toxicant is allowed to flow downstream, it may kill fish for several miles. Toxic effects generally last less than one week. Further details regarding initial impoundment treatment can be obtained from the Commission's Fish Division.

Proper pond stocking, in species stocked, sizes, and timing, is vitally important if the pond is to develop a balanced population. The highest quality fishing occurs when only two species, in this region bass and bluegill, are



Many old ponds are noted for their large-sized fish but not their overall productivity.

present. Crappie, while an excellent fish in its own right, competes directly against both species and reduces the overall harvest potential.

The size of the fish stocked is nearly as important as the species. Only by stocking a certain number of young bass and bluegills in a predetermined ratio can one predict what the fishing will be like within a year or two after release. When a combination of adult and young fish are stocked, the pond is oftentimes found to be out of balance almost from the start. At the present time, in newly constructed public lakes, the Commission stocks 100 young bass and 1,000 young bluegills per surface acre. The bluegills are stocked any time from August to January, and in the following spring, from March to June, the young bass are introduced.



Commission photo by Kesteloo

Properly designed and scientifically managed ponds are one answer to the demand for more fishing and less time between bites.

Fertilization has often been mentioned as the major key to pond fish production. Commercially prepared pond fertilizers are more concentrated than farm fertilizers and for this reason are put up in smaller, 40-pound bags. The recommended pond fertilizer for most of Virginia has a nitrogen, phosphoric acid, potassium ratio of 20-20-5. Nearly all of the major dealers handling farm fertilizers also carry a pond fertilizer of this composition.

Current pond fertilizer prices are in the neighborhood of \$120 per ton, undelivered. A ton would be sufficient for one application to a 50 surface-acre pond. The recommended application rate is one sack, or 40 pounds, per surface acre. An initial application of fertilizer should be made with the first warming of waters in the spring, usually around mid-March. Two weeks later a second application should be made. Additional application needs can be determined by

the extent of the "water bloom" two weeks or more after the previous fertilization.

To determine "water bloom," a tin can lid attached to a stick can be used. The stick is submerged vertically and if the lid can be distinguished at 16 to 18 inches in depth, more fertilizer should be added.

Methods for distributing fertilizer within a pond are relatively simple. Three bags, or enough for three surface acres, are deposited just offshore (in one to three feet of water) at equidistant intervals. At the time of immersion an X is cut from corner to corner on one side of each paper sack. Wave action usually disperses the material within a week's time without outside assistance.

One of the big keys to quality fishing, besides fertilization and the proper stocking of fish, is a restriction on the removal of bass below 14 inches in length. No bass below this size should be removed. Undersize bass that are deeply hooked while live bait fishing can be released without harm simply by snipping the leader. Strong digestive juices secreted by the fish will dissolve the hook over a period of time. The importance of a 14-inch size limit cannot be stressed too highly. It is vital for the maximum production of "big lunker" bass as well as for sustained bluegill growth.

Businessmen find it impossible to conduct business without keeping records. Proper pond management is nearly as impossible without good records of the numbers, sizes and species of fish captured. A daily log book should be made up and used to record all fish taken from the pond. Annual changes in abundance, size, and species composition can then be compared to see if management changes are required. If log book interpretations are in doubt, they may be submitted to the Commission for evaluation. Here is a recommended format for log books:

DATE	Number Fishermen/party	Species	No.	Lengths in Inches	Total Weight/Species	Bass Above 14"	Bass Below 14"	Species & Number Returned
8/2/66	4	L.Bass	5	15-15 16-20 22	10 1/2 lb.	5		Bass - 6
		bluegill	15	7-8	4 1/2 lb.			
8/10/66	2	L.Bass	1	16	1 3/4 lb.	1		none
		Pickeral	1	20	2 lb.			
8/10/66	3	none caught						

When ponds are constructed properly, according to modern management principles, then management problems can be held to a minimum. When minimum management measures described above are followed, results far "outshine" those achieved in unmanaged, or unmanageable, fishing waters.

## SOME CONSEQUENCES OF THE RECREATION EXPLOSION

I AM using the expression "recreation explosion" in the same sense that has become familiar in the term "population explosion." The phenomena are similar and related, but with an important difference. They are similar in that there is rapid and accelerating expansion. They are related for the simple reason that a larger population would naturally tend to provide more participants for recreational pursuits. They are different in that outdoor recreation is increasing considerably faster than the population as a whole. A *larger percentage of the population* is motoring, camping, picnicking, motorboating, water skiing and doing other things outdoors for pleasure.

Several years ago the Outdoor Recreation Resources Review Commission identified pleasure motoring as the most indulged in of outdoor recreational activities. In addition to just "going for a drive," people drive to places where they swim, picnic, hunt, fish, camp, take pictures, study nature, and so on. Every year the radius of such trips increases as both roads and cars are improved, including station wagons, camper cars, and trailers that in themselves offer inducements to take to the road.

Among the consequences of this are more cars on the roads, especially on weekends, holidays, and during vacation periods. They produce even greater traffic congestion leaving home, returning home, and at the reception areas themselves. Sunday traffic is often bumper-to-bumper, creeping along a few yards between stops. And it may take longer getting a few blocks through a gateway tourist town than it does to drive fifty miles to it.

It seems to me that one of the worst consequences of this situation is that of an ever-heavier pressure on the authorities to build more roads in parks, wilderness areas and other places that are better explored, understood and enjoyed otherwise than by car.

The increased popularity of camping has had many consequences that seem to be good, including experiences in sharp contrast to urban living. The demand, however, has increased faster than park departments have been able to finance and construct facilities. Campgrounds get over-used, and when the camping density is not held down, they become rural slums and there is a wear and tear on the habitat that diminishes the natural attractiveness of the site. A sharp contrast is developing between the rough-it kind of camping and that which demands electricity, flush toilets, hot showers, and concessions to supply accustomed needs, including many not appropriate to living in nature. Too large campgrounds, whatever their size, and crowding lead to annoyances, vandalism, vulgarization, and crime.

Under certain conditions, fishermen stand nearly shoulder to shoulder in the wan, perhaps vain, hope of catching a trout, and boats get in each other's way at less than casting distances. In some favored locations hunter density is too great for reasonable safety and hunter success would

seem scarcely high enough to warrant the effort. Part of this is due, no doubt, to city hunters' reluctance to go into back country away from roads and too far from the roadside taverns.

The average horsepower of outboard motors has doubled, doubled, and doubled again during the past two decades. The two-and-a-half to seven horsepower outboard that the fisherman used for trolling can still be bought, but the big market is in motors up to 90 horsepower that supply the demand of the aquatic hot-rodders and the speed needed for water skiing. This development has produced conflicts with and dangers for fishermen and swimmers, and scarcely a lake is without the noisy intrusion of these high-powered boats. I have, in fact, seen a water skier being towed on a pond so small that it was impossible to do anything but go in a tight circle.

In some cases counties have zoned larger lakes to separate these conflicts in space. As all these recreational uses of water are proper, although some are incompatible, time-zoning as well as space-zoning may be undertaken in the

This camper seeks experiences in sharp contrast to those of urban living. There is an increasing demand, however, for facilities which tend to concentrate campers and degrade the outdoor experience for all.

Commission photo by Kesteloo



future. This could give the water over to fishermen in the early and late hours of the day and leave the middle of the day to the active sports. The use of alternate days might be feasible in some cases. Each sport would have alternate Sundays.

Bow and arrow hunting is a newly explosive outdoor sport that is causing few, if any, problems. Most states have given these hunters special seasons, before the opening of the regular deer season, and this has met with few objections from gun hunters, presumably because the success of the bow hunter is low.

These brief statements about the outdoor recreation explosion lead me to a few generalizations:

1. *The large number of recreationists who crowd the limited public spaces may cause a reduction in the quality of the recreational experience.*

This is true for nearly every activity that I have mentioned, and it is especially true in the parts of the United States where most people live. It is this loss of quality that causes me to doubt the accuracy of the long-range forecasts of recreation numbers. When roads, campgrounds, beaches, and fishing spots are unbearably crowded, people will drop out of the activity. Because we all believe that outdoor recreation is good for us as well as fun, governments at all levels need to provide more adequately for public open space and appropriate facilities. But beyond

From an address by Stanley A. Cain, Assistant Secretary of the Interior for Fish and Wildlife and Parks, at the National Young Women's Christian Association Conference on Outdoor Recreation and Conservation in cooperation with the Conservation Foundation, at Jackson Lake Lodge, Grand Teton National Park, July 19, 1966.

that, it seems to me, limitations must be placed on use. Too many users spoil the nature of the recreational pleasure for every one.

*2. There seems to be a widespread feeling that any kind of recreation should be allowed almost anywhere.*

I know that there are exceptions to these generalizations, but hunters seem to want to hunt wherever there is anything to shoot; motor boaters and skiers seem to feel that it is their right to go anywhere on the water, even though they interfere with other recreational uses of water; and the people who demand roads nearly everywhere seem to have little concern for wilderness values. This is the danger of the multiple-use principle, which is excellent when its limited applicability is understood. If it is taken to mean that all users have a right of use any place and any time it will be a catastrophe. It is clear, then, that the planners and administrators of public recreational lands must devise means of separating incompatible uses while providing somewhere for all legitimate and appropriate uses of land and water for outdoor recreation. New administrative boldness seems called for and, perhaps in some cases, new legislative authority to restrain and restrict the recreational activity.

*3. The pressure for private land and water for outdoor recreation, and the widespread ability to buy it, is rapidly diminishing the opportunities to acquire open space for public use.*

This is most critical on the Atlantic, Gulf, and Pacific coasts, the shores of the Great Lakes, and all inland lakes and streams of easy access to population centers.

In addition, the rapid rise in cost is making the public dollar buy less and less with each passing month. State and federal experience is ample in this regard. Public bodies are disadvantaged over private buyers. Once the government declares its intention, ordinary laws of the marketplace cease to operate. Sellers are tempted to wait for condemnation with the hope they can reap a hefty profit, which they would not get on a normal market. And sometimes their gamble pays off.

Citizens who have a concern for open space and public recreation areas, for natural beauty and the quality of the environment, find the problems so big that they seem unapproachable by the individual. The common question is, "But what can I do?" And it is a fair one.

Form small face-to-face groups to study and discuss conservation issues and to determine what individual or group action is needed. These issues fall naturally into three

**Overuse results in a wear and tear on the outdoor environment that inevitably diminishes its natural attractiveness.**

Commission photo by Kesteloo



categories: local issues, state issues, and national issues. In other words, they break down according to the structure of government.

Local issues may concern the acquisition of more city or county park acreage, the prevention of encroachment by adverse uses on what you already have, or its better use. It may be a matter of clean-up of local water pollution, or the regulation of the use of pesticides.

State issues may be similar, but on a larger scale.

Federal issues are abundant, and all of them have significance for the states and potentially for every citizen. Some unresolved ones include the protection of wild rivers, of estuaries and natural coastline, and of rare and endangered species. The passage of the Wilderness Act was a magnificent accomplishment, but we are only beginning to apply its protection. We are still struggling through the preliminary work of preparing lists of areas for submission to Congress so that the legislative machinery can complete the work of defining specific tracts of land and water as wilderness protected by law. Interpretation of the intent of the Wilderness Act is a matter of vital importance for every National Park and Monument, Wildlife Refuge and Game Range, and for the Primitive Areas of the Forest Service. There are ample causes for citizen concern wherever you turn.

The second step is putting the group knowledge to work (as a group when there is a consensus, or individually when there is not), for *the goal of this kind of knowledge is action*. I would recommend very strongly that conservation issues be approached on a nonpartisan basis. Although they often are not, they should be nonpartisan issues.

After study, groups will find themselves in favor of some current government proposals and against others. Direct action is sometimes possible by the ballot. Public questionnaires to contestants for office can smoke them out on critical issues by challenging them to answer a group of closely reasoned and related questions on conservation issues. Newspapers will usually cooperate. Even a small group of concerned citizens can effectively stimulate public interest and sometimes marshal it by means of public meetings, development and circulation of informative literature, and by personal appeals. Issues can sometimes be clarified by showing the alternative lines of action to be to public or private benefit.

Incumbents as well as candidates can be reached by direct petition. This is the citizen's right in our form of government. Courteous, well-reasoned individual letters are read and taken account of. Mass mailings of identical telegrams, letters or cards are generally ignored although the voice of an authorized spokesman of an organization is heard and taken into consideration. Attend hearings and testify.

The administrators of public agencies can be reached in the same way that elected officials can. Let them know what you think, what you are for and what you are against. Give the reasons for your position. You can be effective. I have ample reason to know. My conservation friends give me more trouble—in the sense of continuous pressure—than anyone else. For this I can offer fervent thanks, for sufficient heat on an issue from sufficient voters gives an administrator as well as an elected official a lever for action.

Try it. You can help yourself, your community, and your nation. One of the great pleasures of life is the feeling of being a citizen.



# A NEW BIRD BOOK

**B**IRDS IN OUR LIVES is a factual story about birds and people. It tells of the positive values of birds, and of the enjoyment and inspiration that birds give to millions of people. It tells also of problems, warnings, and hopes. The perspective is broad and the view is many-sided.

The authors—61 in all—have a wide range of backgrounds. Many are internationally known. All write with authority, clarity, and simplicity.

A frontispiece—in color—features the bald eagle, symbol of our nation. The book has 576 pages, and is attractively illustrated with 80 wash drawings and 372 story-telling photographs.

*Birds In Our Lives* was written to give readers, in all walks of life, an opportunity to achieve a greater appreciation and a deeper insight into the impact of birds on our civilization. It brings into focus the economic, esthetic, scientific, and recreational values of the 850-odd species that comprise the bird resources of North America and Hawaii.

All whose lives have been touched by birds will find interest and value in this book. Birdwatchers, artists, photographers, poets, naturalists, sportsmen, farmers, gardeners, scientists, students, teachers, and many others will want to read it and to keep it as a reference.

*Birds In Our Lives* is the second in a projected series of books on the nation's wildlife resources being planned and produced under the sponsorship of the Bureau of Sport Fisheries and Wildlife in cooperation with public-spirited citizens representing many agencies and institutions. *Waterfowl Tomorrow*, the first in the series, is a 770-page volume that tells about the management and conservation of the 48 species of migratory ducks, geese, and swans that live in North America. Three countries—Mexico, the United States, and Canada—participated in its production.

*Birds In Our Lives* is bound in cloth and stamped in gold. It can be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402. The price per copy is \$9.00, with a 25 percent discount when purchases are made in quantities of 100 or more books to one address. Books purchased for resale are also subject to a 25 percent discount. All books are individually boxed.



Photo by Luther Goldman



Photo by Jack Dermid



Photo by Rex Gary Schmidt

All photos from *BIRDS IN OUR LIVES*, courtesy U. S. Fish and Wildlife Service.



Bird  
of  
the  
Month:

## Rose-breasted Grosbeak

By DR. J. J. MURRAY  
Lexington

YOU are now reading about a bird that this month is far away from us. The rose-breasted grosbeak that you may have seen last summer is now in southern Mexico or Guatemala or northern South America. It is feeding on strange tropical insects, basking in tropical sunshine, without a thought of its mountain home in Virginia. There is in that bird, however, a deep instinctive knowledge of that real home in the Blue Ridge, as different as can be from the tropical jungle where it now winters. In the early days of May it will be back here, ready to mate and nest. Strangely enough, there is one winter record of this bird for Virginia, at Alexandria on December 2, 1959. Naturally, the bird did not live long. It was found dead the next day. This seems to be the only winter record in our nation outside southern Louisiana.

The rose-breasted grosbeak may be seen anywhere in Virginia in migration time, although it is rarer as one gets nearer salt water. It is scarcely abundant anywhere in our state, but is at least fairly common at elevations above 2500 feet.

This is one of our loveliest birds. The male and female, both beautiful, are quite different. The male has a black head and back and tail, with a white rump. The wings are black but with large patches of white, which when the bird flies make a white band across the body and wings. The

lower breast and belly are white. The upper breast is rosy red, the red running down like dripping blood into the white. The female is duller, grayish-brown above, with a white line over the eye. One of the strangest things about this bird is that the linings of the wings are colored, rosy in the male and rich yellow in the female. Amazingly, this is true even in young birds in the nest.

In our Virginia mountains the nest is generally in a rhododendron thicket and usually about eight feet from the ground. It is bulky and loosely built. One of the inexplicable habits of this bird, contrary to all rules of safety, is for the brightly colored male to sing while sitting on the nest. This seems just to invite disaster. The main reason why females are usually duller than their mates seems to be that they may not be noticed while they are incubating or brooding.

The female lays three to five beautiful eggs, about the size of the eggs of a cardinal, varying much in a basic color of greenish to bluish, with brownish to purplish markings. The male grosbeak is a good parent. He often feeds his incubating mate and helps to feed their young. An insect eater, the rose-breasted grosbeak in its feeding habits is almost 100 percent beneficial to human interests.

The song of this bird is a rich warble, similar in pattern to the song of a robin or a scarlet tanager, but sweet where the robin's song is dull and the tanager's somewhat harsh.

# the DRUMMING LOG

Edited by HARRY GILLAM

## Duck Stamp Increase Meets Opposition

The International Association of Game, Fish and Conservation Commissioners voiced opposition to H. R. 14136, a bill which would authorize an increase from \$3 to \$5 in the cost of Migratory Bird Stamps, in a resolution approved at their annual meeting in Kansas City, Missouri, September 16. The group's main concern was over the disproportionate ratio between federal and state hunting fees such an increase would create. The \$5 price tag would be higher than the basic hunting license in most states.

The duck stamp bill was favorably reported out of the House Committee on Merchant Marine and Fisheries, where it was amended to give the Secretary of the Interior discretionary authority to impose such an increase when it seems justified. The increase was deemed necessary by government officials in order to expand the wetland acquisition program and maintain the interest of waterfowl hunters. The International Association of Game, Fish and Conservation Commissioners favors stepped-up wetland acquisition, but recommends direct appropriation of funds from general revenues to accomplish it.

## Citation Pair



Walter Lillard of Richmond managed to drag these two citation-sized largemouth from the waters of Chickahominy Lake in one hour's time while fishing out of Dillon's Landing. The smaller fish weighed in at 5 pounds 1 ounce while the twin lunkers weighed 8 pounds 5 ounces and 8 pounds 6 ounces respectively. A floating balsa minnow produced the fine string.

## First Legal Shenandoah Muskie



This 6 pound muskellunge taken from the South Fork of the Shenandoah by Calvin Anderson of Fairfax is the first known legal-sized specimen taken as a result of fish stocked there experimentally in 1964. Other muskies below the 26-inch minimum size limit are known to have been caught and released last summer.

## Oil Company Defers to Waterfowl

Extra efforts of Shell Oil Company's Oklahoma Division to make conservation and commerce compatible have won commendation from the Bureau of Sport Fisheries and Wildlife, the Wildlife Management Institute reports. The applause is for the division's 1965 gas field program that was completed on the Salt Plains National Wildlife Refuge before thousands of ducks and geese dropped in on their annual migrations. The north-central Oklahoma refuge straddles the new gas field and drilling activities could have frightened off the birds.

Shell began drilling six wells on the refuge last summer during the off season when most of the refuge's feathered inhabitants were tending to family duties in the north. The operation had to cease by September 30, the usual fall arrival date for the birds, and with a minimum of surface damage. Shell brought in five wells by the deadline date and ceased activities on the sixth in deference to the birds. In addition, \$100,000 worth of gas-production equipment was bid and delivered within a month's time to meet the deadline. To prevent pollution and damage to the equipment during periods of high water, special construction practices were followed, and all facilities were painted to blend with the landscape.



## New Movie

A new 20-minute color film entitled "Conservation In The Classroom" has been completed under the direction of the Virginia Resource-Use Education Council and is available on a loan basis. Primarily designed for showing to teachers' groups, P. T. A.'s and other groups interested in promoting better conservation in the schools, the film depicts the type of training a teacher receives at the Council's Natural Resource Short Course offered at four Virginia colleges during summer months. The story centers around an individual teacher attending the three-week course at the College of William and Mary in Williamsburg. The audience follows her through a sampling of her classroom and field work, then back to her school to see how she uses what she has learned to give her students a better understanding of conservation principles. Copies of the film are available from Game Commission and Department of Education film libraries in Richmond and from the Virginia Resource-Use Education Council, Seitz Hall, V.P.I., Blacksburg, Virginia.

## Triple Threat Man



C. O. Corder of The Plains goes after the big ones as evidenced by the fine array of trophies held by his sons in the photos above. His list of whoppers, all bagged during the past year, includes a 14 point buck, a 25 pound spring gobbler, and an 8 pound 9 ounce largemouth bass.



Edited by ANN PILCHER

### Nature Camp Dynamo



Named Conservation Educator of the Year in the second annual Statewide Conservation Awards Program sponsored by the Virginia Wildlife Federation in cooperation with the National Wildlife Federation and the Sears-Roebuck Foundation, Mrs. Fred Schilling of Afton receives a white-tailed deer statuette from Governor Godwin at the Conservation Achievement Banquet held in the John Marshall Hotel on October 21.



**Merry  
Christmas,  
Young  
Readers**



# YOUTH AFIELD



### FFA In Action



With the help of State Game Warden Houston I. Todd, FFA members of Riverheads High School completed several conservation and wildlife management projects during the spring of 1966. Club members distributed seed to planters of wildlife food patches for quail and other species. They liberated trout in Augusta County streams in cooperation with the Game Commission fish management program. Above: David Howell holds Japanese green pheasant, Game Farm raised and ready for release in the wild at Stuarts Draft. Jimmy Henderson, Stuart Desper and Warden Todd look on.

### Catfish, Bass, and Bream



Four-year-old Jay Newman, son of Game Warden J. T. Newman and grandson of Wildlife Manager W. C. Newman, holds his Labor Day catch from newly opened Oak Hill Lake on the Cumberland State Forest. Fishing companion Herbert L. Jones, VPI Extension Service Agent in Smithfield, says Jay still talks about the "fishes" he caught.

Right: Bruce Anderson, age 4, of Mechanicsville, measures one of a thousand scotch pines planted by his mother and aunt early this spring for future Christmas trees. Presently it serves as ground cover for birds.

Left: 1966 Nature Campers, instructed by Game Commission Educational Field Services Coordinator Darrell A. Ferrell, were taught how to age deer by comparing the animals' teeth with a deer aging chart. Examining animal pelts, bird wings and mounts, studying wildlife charts and watching motion pictures were means of learning how to identify mammals, birds and fish. Mr. Ferrell stressed the value of our outdoor environment; explained the relationship between woods, water, soils, wildlife, and man; and acquainted his students with the wildlife management program of the Game Commission.

### Planted For Christmas



# ON THE WATERFRONT



Edited by JIM KERRICK

## Rules of the Road

It is more satisfying to do anything well than to do it poorly. It is more fun for you when cruising if you are familiar with the buoy marking system, both for navigable and non-navigable waters; more fun if the water skier and driver understand and recognize hand signals; more fun to display good seamanship than to act like a landlubber. Experience is not necessarily the best teacher: it is better to learn as much as you can beforehand.

Some things are pretty basic, whether you own a small craft or a cruiser.

Here are eight rules with which you should be familiar:

1. Sailboats usually have the right of way over powerboats, except when a sailboat is overtaking a powerboat.

2. When two boats approach each other at right angles or obliquely, the one which has the other on its port side has the right of way but must avoid changing course or speed in such a manner as would increase the danger of collision with the other boat.

3. When one boat is overtaking another boat the boat doing the overtaking must stay clear of the one being overtaken. The boat being overtaken has the right of way, but must not crowd in upon or cross the course of the overtaking vessel.

4. When two boats approach head on, each should steer to the right and pass the other port side to port side.

5. Boats leaving slips or piers have no right of way until they are entirely clear and in full view. Proceed slowly and with caution.

6. Under certain circumstances a small powerboat may have the right of way over a tug and tow, but good sense tells us to yield the right of way because a small boat is much easier to maneuver than a string of barges.

7. If you are involved in a boating accident or come across one, it is your duty to render all possible assistance.

8. Take it easy and slow down when passing a fishing party.

There are many unwritten rules under the heading of COMMON SENSE.

## Galvanic Corrosion

Galvanic corrosion, like the theory of relativity, is an unfamiliar subject as far as the average Sunday afternoon boater is concerned.

Because it is not generally understood by laymen, the problem of galvanic corrosion is too often ignored by people who boat in salt or mineral-laden waters.

Whenever two dissimilar metals are placed in a conductive solution such as salt water and connected in some way, an electrical current will flow between them. The result is gradual corrosion of one of the metals.

Here's how an outboard motor is affected. The gear case of an outboard motor is made of aluminum and if the propeller is constructed of bronze, an electrical current will flow from the aluminum gear case to the bronze prop when they are both immersed in salt water, causing the aluminum to corrode. For this reason bronze props are not recommended for salt water use; aluminum props are much preferred.

Many other common metals, such as steel and copper, will cause current to flow away from aluminum under the conditions described above, but only two metals—magnesium and zinc al-

loys—will cause current to flow to aluminum and thereby protect it.

## Change of Status

When a boat owner receives his laminated card, certificate of number, he will also receive the form shown below, which is to be retained by the owner until needed. This form should be completed and returned to the Boat Section, Virginia Commission of Game and Inland Fisheries, P. O. Box 1642, Richmond, Virginia 23213, within 15 days after ANY CHANGE OF STATUS of the boat, such as sale, abandonment, or destruction.

The laminated certificate of number should accompany the Change of Status Card and NOT be passed on to the new owner. A registered motorboat cannot be legally operated on the waters of this state unless the boat is registered to the actual owner.

If you should have a change of status of your boat and fail to notify the Game Commission of this change, you might be paying taxes on this boat for someone else.

Additional Change of Status cards may be obtained from your local game warden, boat dealer or direct from the Boat Section, P. O. Box 1642, Richmond, Virginia 23213.

Boat owners must complete this *Change of Status* form and return it and the laminated certificate of number, to the Boat Section of the Virginia Commission of Game and Inland Fisheries within 15 days of sale, abandonment or destruction of their craft.

APP. MAILED	ACTION DO NOT WRITE ABOVE THIS LINE	COMPLETED	BOAT NUMBER
COMMONWEALTH OF VIRGINIA			
BOATOWNER SAVE AND USE THIS FORM WHEN BOAT CHANGES OWNERSHIP. ANY CHANGE IN STATUS MUST BE REPORTED WITHIN 15 DAYS MAIL WITH YOUR CERTI- FICATE OF NUMBER TO BOAT SECTION P.O. BOX 1642 RICHMOND, VIRGINIA 23213			
EXPIRE	COMMISSION OF GAME AND INLAND FISHERIES DATE ON THIS BOAT TO NAME STREET CITY STATE (ALL OWNERS MUST SIGN)		
SIGNED			
WHEN OWNER IS DECEASED, THIS FORM SHOULD BE SIGNED BY ADMINISTRATOR OF ESTATE REVERSE SIDE FOR CHANGES OTHER THAN OR TRANSFER			
REG. NO.	MADE IN U.S.A.	SERIAL NO.	
19	19	19	19
PROPS	PROPS	PROPS	PROPS

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